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1. Wellington, N. Z., Seat of New U. S. Embassy
2. War-Battered Caen Rebuilding University
3. All 48 States Subject to Snowfall
4. United States Leads Toy-Trade Revival
5. Glacier-Framed Kashmir Is Pawn in Struggle

THE BULLETINS WILL NOT APPEAR DURING THE HOLIDAYS. NEXT ISSUE WILL BE JANUARY 3, 1949.

VOLKMAR WENTZEL

A WINTER'S NIGHT IN THE NATION'S CAPITAL: SNOW (Bulletin No. 3) SOFTENS THE GLARE OF LIGHTS AND MUFFLES THE SOUNDS OF TRAFFIC

Bulletin No. 1, December 13, 1948

Wellington, N. Z., Seat of New U. S. Embassy

A LIVELY arena of ocean-port commerce in a gale-blown amphitheater of mountainside homes—that is Wellington, capital of New Zealand. The United States diplomatic mission there, elevated from consulate to legation in the critical war days of early 1942, will shortly take on full-fledged embassy status.

Since its consulate days, the mission now designated as an embassy has been housed in a modern office building in Wellington's bay-level port section. Much of the busy commercial area around it lies on made land.

Centrally Located

Now a spreading city of 180,000 people, Wellington compares with Hartford, Connecticut, in relative latitude as well as size. About 6,700 airline miles southwest of San Francisco and 1,385 miles southeast of Sydney, Australia, it began in 1840 as a settlement of British colonists at the south end of North Island. They chose a Maori village site where the mountains sloped down to the lakelike waters of Port Nicholson, a sheltered arm of the Pacific Ocean.

Because of its central position on Cook Strait, which separates New Zealand's North and South islands, Wellington became the capital in 1865, superseding Auckland, the dominion's only larger city. Soon after the change, expanding commerce created for Wellington the dilemma of where to grow. It could only climb steep hillsides or push out into the bay. It did both.

In those days, Lambton Quay, as its name implies, was a waterfront street. Still the main street for stores and offices, it holds to the curve of the natural shore line, although now several blocks inland from the deep-water port.

In its sheltered port position, Wellington is compared to Seattle. Its tiers of homes mounting the hills, with cable cars serving some sections, also suggest San Francisco. For persistent windiness, it puts Chicago to shame.

'Quake-proof Buildings

Northeast trade winds, roaring down from the tropics, hit North Island's mountain barrier, which funnels their flow into the land break at Cook Strait. Wellington weaves and rolls with the full force of the blast. The winds, credited with giving bugs and germs no chance to settle, average 24 miles an hour the year around.

Recognizing their position in the Pacific earthquake belt, Wellington's planners built of frame in the early days. Through recent decades, however, they have erected many large and beautiful stone buildings, incorporating 'quake-proof features that provide against heavy loss of life. Outstanding are the white marble parliament buildings.

Combined overseas and coastal trade now place Wellington nip and tuck

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UMI

HERFORD TYNES COWLING

WORKERS IN A KASHMIR SILK FACTORY PROVIDE FOR THE FUTURE OF THEIR CRAFT

Like the bead portieres of Victorian days, strings of cocoons hang from ceiling to floor. These particular cocoons have been selected to add to the silkworm supply rather than to the silk yardage turned out. Instead of killing the worm inside its nest to obtain the silk filaments unbroken, the cocoons are carefully strung in long chains and hung in a room where a constant temperature is maintained, until the pupa grows into a silkworm moth. When it emerges, it is captured and added to the regiment of workers which produce the silk for which Kashmir (Bulletin No. 5) has been famous for generations.

Bulletin No. 2, December 13, 1948

War-Battered Caen Rebuilding University

IN A museum city of old Normandy, a new cornerstone is making headlines. It is the one recently laid for the new university of Caen, which will replace the ancient institution demolished in the 1944 battle for the beachhead in France.

Caen (map, next page) was an old settlement, already linked with the life and exploits of William the Conqueror, when the university was first established in 1432. Exactly how old the town was then is still an unsolved question, though it is known that a village existed there as early as the 9th century.

English Founded It

William of Normandy made Caen his home and capital. From it the invasion of England was launched in 1066. There William and his wife, Matilda, built two magnificent abbeys.

The original University of Caen was founded by Henry VI of England nearly four centuries later, when the tide of conquest was running counter to the arms of Normandy. At that time the English held much of France, and established their Caen institution as the third-oldest English university after Oxford and Cambridge.

From the beginning, the fortunes of the university fluctuated with the ebb and flow of international and religious wars, of revolution, and of prosperous and hard times. It started with only church-code and civil-law departments. But before 1440 it had added theology, arts, and medicine in order to support the English rulers competing with the University of Paris.

The university survived when the French took over Caen in 1450, though it was soon reconstituted with the loss of its former royal privileges. Submerged by the French Revolution, the modern university was re-established in 1894.

United States, Britain Donate Books

The university's 18th-century buildings, its furnishings and museum collections, historic Norman manuscripts, and priceless books were all destroyed in the bombings and fires that leveled most of Caen in the summer of 1944.

The new structure, it is reported, will rise on a height overlooking the city and castle founded by William the Conqueror. Among the contributions offered for a new start are book collections from United States libraries, and a donation including 14th-century French documents from the library of the British House of Commons.

Plans for the rebuilding of Normandy's museum city were under consideration almost as soon as the Germans started retreating. Only two major landmarks still raised their towers above the battered "City of a Thousand Spires"—William's Abbaye aux Hommes and Matilda's Abbaye aux Dames.

A few other historic buildings in Caen received little damage or were

UMI

with Auckland in volume of export-import commerce. Both cities provided important facilities for the United States Navy in its World War II campaign in the central and northern Solomon Islands.

With the Japanese threateningly near in the war's early phases, Wellington fortified a high peak within the city reaches, equipping it with long-range guns. In the cemetery for war dead on a hill behind the city, an Oregon pine marks a "spot of the United States in New Zealand" where sailors and marines lie buried. New Zealanders have pledged its eternal care.

NOTE: Wellington is shown on the National Geographic Society's map of the Pacific Ocean and the Bay of Bengal. Write the Society, Washington 6, D. C., for a price list of maps.

For additional information, see "The Making of an Anzac," in the *National Geographic Magazine* for April, 1942; and "New Zealand 'Down Under'," February, 1936.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, April 12, 1948, "New Zealand City Celebrates Centennial."

W. ROBERT MOORE

THESE NEW ZEALAND YOUNGSTERS WALK A DOWNHILL COURSE TO DUNEDIN AND SCHOOL

After classes, coming home is harder, for they must walk uphill out of the oceanside basin in which the city lies. Dunedin is near the southeast corner of South Island, while Wellington, the dominion's capital, is more centrally located at the south tip of North Island.

All 48 States Subject to Snowfall

THE season's first big snowstorms—including one in western Kansas which stopped railroad traffic (illustration, next page)—have served notice that snowtime is here again. Not one of the 48 states completely escapes "the noiseless work of the sky" which leaves "no cloud above, no earth below—a universe of sky and snow."

Florida and California, vying for winter tourist trade, offer sunny southern reaches that are virtually frostproof. But almost annually, north winds bring light snow and a touch of frost to central and northern Florida's orchards and truck patches. And the heaviest single and seasonal snowfalls on U. S. Weather Bureau records occurred on the western slopes of California's Sierra Nevada.

Chicago Averages 58 Snowfalls a Year

Although the American land is likely to be at its coldest about mid-January, snowfall is often greatest in February. But big snows can come early. The "silence, deep and white" that lay 54 inches deep around The Dalles, Oregon, in 1921, preceded Thanksgiving by a full week.

Chicago averages one snow flurry in October, 19 snowfalls before each New Year's Day in its winter allotment of 58. New York normally has only half as many by New Year's, but runs its total to 35 by the first of each May. More snow fell on New York City last December 26 and 27 than fell there in the blizzard of March, 1888. Snow beautifies cities (illustration, cover) but sometimes paralyzes traffic and utilities.

Snow belongs to winter, but it occurs in all seasons and in all climes. Under tropical or midsummer conditions, its formation is confined to clouds at cold upper levels. In falling, it changes to rain, except on high mountains. Thus, snow all year around crowns high peaks of the Andes and of Africa's Ruwenzori (Mountains of the Moon), both directly at the Equator.

The snow line naturally tends to be higher on the sunny side than on the shady side of mountain chains. The Pyrenees, for example, show perpetual snow caps to the French on the north, and virtually no snow to observers in Spain on the south. The towering Himalayas are an exception. Getting far greater snowfall on the south due to Indian Ocean moisture, their snow line is lower on their sunny southern side.

Platter-shaped Flakes

Snow is not frozen water, as are hail and sleet. It is water vapor that crystallizes directly into ice. When formed at very cold temperatures, it falls as glittering, diamondlike dust. If formed at just below 32 degrees Fahrenheit, the ice crystals mat together in large, moist, complex flakes.

Berlin, in 1915, reported flakes the size and shape of muffins that rocked from side to side as they fell. Britons and Americans looked at weather records, and had better yarns to tell. At Chepstow, England, in 1887, flakes "as big as snowballs" fell. In the same year, near Fort Keogh,

UMI

left in a state offering possible restoration. These include the Gothic Church of St. Pierre, the Church of St. Nicolas (begun in the 11th century), and the 17th-century Notre Dame de la Gloriette. Completely, or almost completely, destroyed were the city hall, the fortified portal of the Conqueror's castle, and a number of old Renaissance mansions in the heart of town.

NOTE: Caen may be located on the Society's map of Europe and the Near East.

For further information about the Caen region, see "Normandy's Made-in-England Harbors," in the *National Geographic Magazine* for May, 1945*; "Coasts of Normandy and Brittany," August, 1943; "France Farms as War Wages," February, 1940; "Normandy—Choice of the Vikings," May, 1936; and "The Land of William the Conqueror," January, 1932. *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00.)*

DRAWN BY NEWMAN BUMSTEAD

NORMANDY'S CAEN FIGURED IN TWO GREAT CROSS-CHANNEL INVASIONS NEARLY 900 YEARS APART

As William of Normandy's capital, Caen launched the campaign that sent its ruler to England as William the Conqueror, in 1066. In 1944, reversing the procedure, General Eisenhower's Americans, Britons, and Canadians landed on the flat coast northwest of Caen and carved out the beachhead from which all western Europe was wrested from the Germans.

United States Leads Toy-Trade Revival

THOUGH the United States is now the world's leading toy producer, postwar shipments of Christmas surprises from Germany, once world leader, are increasing. The trickle of toy imports brings back memories of those frosty holiday seasons of the 1920's when German playthings were most often seen beneath the Christmas tree, and the now bomb-battered city of Nürnberg ranked as Santa Claus's most important workshop.

At that time Japanese and United States toy manufacture for world export was slight. The "made in Germany" label was stamped on 75 per cent of the United States imports—sturdy wooden carvings from Bavaria and Thuringia, bright peasant carts and animals, dolls and doll houses, and little tin soldiers.

United States Reached Toy Pinnacle in 1939

Toy purchases from Japan in 1926 came to less than nine per cent of the total. It was another story within the next decade, however, as German toy exports declined sharply, and Japanese trade boomed. At the same time, the United States continued to develop its own expanding manufactures of children's playthings.

By 1939 the United States had become the world's largest toy producer. Not only was it filling most of its own needs; it also was the Number One supplier to other nations (illustration, next page). Today, after a war period in which domestic production took a back seat and foreign toys were practically off the market, the United States still heads the list of toy makers and international merchants.

In 1947 United States toy exports were valued at more than $14,000,000, with a home retail business worth some $250,000,000. American imports last year were about $688,000, a revealing drop from the 1923 high of more than $8,000,000.

In Germany the toy industry now is slowly reviving. Like other European craftsmen of such toy-making countries as England, Czechoslovakia, and Switzerland, German artisans again are at work in old cottage and factory centers taking Santa's orders.

Japan Is Also Rebuilding

Though exports so far have been limited by postwar problems, familiar items like tops and Christmas-tree ornaments are being shipped to the United States from Germany's western zones. Toys once more are adding color to trade exhibits at Hannover and other German fair towns.

Japan, too, is rebuilding its old trade. In 1947 and 1948 small shipments of toys were made, predominantly to the United States. Most of the articles are of celluloid, with a few of tin, wood, and bamboo.

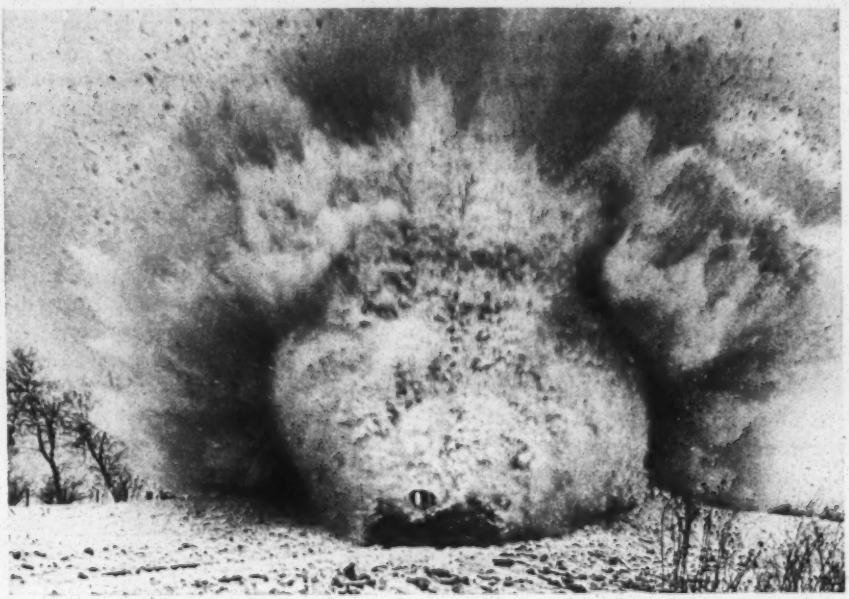
World events quickly affect the toy business both in kind and number. Restrictions on the use of rubber and metal soon curtailed Japan's toy exports after the invasion of China in 1937. The Nazi rise to power in Germany brought many new propaganda toys, military and civilian, includ-

UMI

Montana, fluffy, platter-shaped masses of wet snow "as large as footballs" came wobbling down from the gray sky.

Fluffy flakes cradle air of many times their own ice volume. A foot of new snow is often equivalent to an inch of rain. Snow's estimated rate of fall—two or three miles per hour—is about one seventh that of rain.

Holding so much air, snow is a good insulator, protecting plant and animal life from extreme cold. Fall-sown wheat does better under a blanket of snow than exposed. Animals hibernate beneath it with no fear of lack of air. Men have been buried in snowdrifts two full days and have lived to tell the tale.



EDWARD G. BUDD MANUFACTURING CO.

WITH THE LOOK OF AN ENRAGED CHINCHILLA, A SPEEDING STREAMLINER EXPLODES A SNOWBANK

Near Lee, Illinois, this drift across the Burlington tracks created little obstacle for an 80-mile-an-hour Zephyr. But sometimes drifts pile so deep that traffic stops until snowtrains clear the way.

Ocean Gets Saltier, Rivers Are Blamed

Oceanographers, whose business it is to study such things as how salty is salt water, and why, say the ocean is getting saltier.

The open Atlantic Ocean, off the United States coast beyond range of dilution by the many rivers, averages about 3.6 per cent salt—a shade more than the average for all oceans. So uniform are ocean waters over most of the globe that only in a few places does their salt drop below 3.3 per cent or rise above 3.8 per cent.

Millions of years ago ocean and river water were probably much the same. Even purest river water, however, carries a tiny per cent of salts acquired in draining the earth's crust. Salts also reach the oceans by way of undersea springs. Once in the ocean, the salts stay behind while the sun carries on its work of evaporation which lifts pure water back onto the continents. One method by which the age of the earth has been estimated is by figuring how long it has taken the ocean to get as salty as it is.

The Atlantic is slightly saltier than the Indian Ocean or the Pacific Ocean. Saltiest of all ocean areas is the Red Sea. Least salty is the Baltic Sea.

Glacier-Framed Kashmir Is Pawn in Struggle

THE wild Himalayas form a spectacular background for the struggle between Moslem and Hindu for control of the prince-ruled State of Jammu and Kashmir. Glacier-shrouded peaks look down on a green valley, dotted with orchards and carpeted with wild flowers, the heart of this disputed land.

Jammu and Kashmir is predominantly Moslem, although its ruler is a Hindu. The Moslem revolt which led the maharaja, Sir Hari Singh, to turn over his realm to the Hindu Dominion of India in October, 1947, has developed into an undeclared war. Pakistani forces crossed the border to support their brother Moslems. Fierce Waziristan tribesmen from the wild region between Kashmir and Afghanistan poured over the frontier to join in the fray. For them it is a *jihad*, or holy war.

Adds New Frontiers

The rebels have set up a government of their own—Azad (Free) Kashmir. The United Nations Security Council is trying to arrange a plebiscite in the state. In view of the Moslem majority, such a vote would probably result in the transfer of Kashmir from India to Pakistan.

Jammu and Kashmir, guarding the high passes between India and central Asia, was called the "Shield of Empire" in the days of British rule. Today, in addition to the old boundaries of Russian and Chinese Turkistan, Afghanistan, and Tibet, two new sides have been added, making the "shield" a hexagon. They are the frontiers of the dominions of Pakistan and India that rim Kashmir along the west and south.

Jammu and Kashmir is a land of contrasts. Its Hindu maharaja rules 4,000,000 people, the great majority of whom are of the Moslem faith. Along the rivers inflated goatskin boats, whose models were old a thousand years ago, may float past modern hydroelectric plants. Automobiles skim past *tongas*—two-wheeled carts drawn by bullocks or ponies.

East Meets West in the North

Airplanes roar over ancient dusty trails, along which fleets of buses and battered, overloaded trucks squeeze past camel caravans and nomad shepherds guiding their flocks to greener pastures.

Srinagar, summer capital of the state, lies in the famous Vale of Kashmir. Seven bridges span the Jhelum River whose winding course makes of the city a primitive Asian Venice. Water taxis dart from shore to shore; houseboats shift locations, poled to new sites. From waterfront buildings balconies overhang the stream. Distant snow-frosted mountains are a touch of Switzerland. Asia enters the scene with the Hindu temples and Moslem mosques pointing domes and minarets skyward. Srinagar, composite of East and West in a northern valley, was long a popular resort.

In the neighboring hills, sportsmen hunted wild goats, black and brown bears, and the prized Kashmir stag. Vacationists played polo or sailed the Jhelum and its picturesque lakes in gondolas.

Some of Srinagar's houseboats turn shop and display for sale such

UMI

ing emblems, symbols, and models of party leaders. Military miniatures were prominent, with toy armies and equipment of all countries, tiny tanks, machine-guns, field kitchens, hospitals, and forts.

Playthings everywhere have been influenced by modern science, transportation, and living in general. Among today's mechanical gadgets of play are cars that park themselves, intricate train systems, lock-equipped canals, little sinks with running water, planes that drop bombs, and chemical sets that use real atomic-energy materials.

And today's doll set, not content with the mama-crying variety, are furnished with dolls which realistically drink water and blow bubbles.

JAMES C. SAWDERS

AT AN OPEN-AIR SHOP IN RIO DE JANEIRO, BRAZIL, MOTHER LOOKS FOR A TOY FOR BABY

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products of the district as rice, fruit, and vegetables. Bazaars show silk (illustration, inside cover), copper ware, leather boots and fur hats from Turkistan, and turquoise trinkets and prayer wheels from Tibet. The warm and delicate shawls for which Kashmir is noted (and of which the Paisley is an imitation) are now almost impossible to find. Shawl weaving has become an almost vanished craft.

Away from Srinagar, with its more than 200,000 inhabitants, Kashmir is a primitive, sparsely-settled region. Tribesmen in the hills and valleys make a meager living tending cattle (illustration, below) and growing grain, vegetables, and fruit for their own use. Both wild and cultivated pear, apple, and cherry trees grow luxuriantly, and in season bloom spectacularly against the distant backdrop of the Himalayas.

Jammu, winter capital of the country, lies 100 miles south of Srinagar, on the Tawi River. It has a population of a little over 50,000.

NOTE: Jammu and Kashmir is shown on the Society's map of India and Burma.

For further information, see "The Idyllic Vale of Kashmir," in the *National Geographic Magazine* for April, 1948; "First Over the Roof of the World by Motor," March, 1932; and "House-Boat Days in the Vale of Kashmir," October, 1929.

VOLKMAR WENTZEL

WHITE CALF AND DUSKY KASHMIRI WOMAN PRESENT A STUDY IN LIGHT AND SHADE